

**Notice of Allowability**

Application No.

10/668,024

Examiner

Naheed Ejaz

Applicant(s)

FRANK, ROBERT J.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 13 September 2007.
2. ☒ The allowed claim(s) is/are 1, 4-9, 11-15, 18 & 19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Nathan O. Jensen (Reg. No. 41,460) on October 1, 2007.

2. The Application has been amended as follows:

#### In the Claims:

- Claim 1, "sub-frequency; and" (line 17) has been changed to ---sub-frequency; ---. Claim 1, "increased or decreased" (line 19) has been changed to ---increased or decreased; and increasing a time that the transmitted frequency transitions, while still transmitting, from one randomly ordered nominal sub-frequency to a next randomly ordered nominal sub-frequency---.
- Claim 3, "(currently amended)" (line 1) has been changed to ---(canceled)---.
- Claim 9, "sub-frequency; and" (page # 4, line 3) has been changed to ---sub-frequency; ---. Claim 9, "increased or decreased" (page # 4, line 5) has been changed to ---increased or decreased; and increasing a time that the transmitted frequency transitions from one randomly ordered

- nominal sub-frequency to a next randomly ordered nominal sub-frequency---.
- Claim 10, "(previously presented)" (line 1) has been changed to --- (canceled)---.
  - Claim 15, "sub-frequency; and" (page # 5, line 11) has been changed to --- sub-frequency; ---. Claim 15, "increased or decreased" (page # 5, line 13) has been changed to ---increased or decreased; and increasing a time that the transmitted frequency jumps from one randomly ordered nominal sub-frequency to a next randomly ordered nominal sub-frequency, wherein the increasing is accomplished by applying a band-limiting filter to the transmitted frequency---.
  - Claim 17, "(currently amended)" (line 1) has been changed to --- (canceled)---.

***Reasons for Allowance***

3. Claims 1, 4-9, 11-15, 18 & 19 are allowed.
4. The following is an examiner's statement of reasons for allowance:
5. With respect to claims 1 & 4-8, the prior art of records fail to teach or suggest a method of minimizing detectability of an electronically communicated message, comprising: for each randomly ordered nominal sub-frequency, varying the nominal sub-frequency during the respective sub-dwell period by one of increasing and decreasing the nominal sub-frequency; and transmitting the message at frequencies by which each randomly ordered nominal sub-frequency has been increased or decreased; increasing

a time that the transmitted frequency transitions, while still transmitting, from one randomly ordered nominal sub-frequency to a next randomly ordered nominal sub-frequency as recited in an independent claim 1 and in combination with other elements of the claim.

6. With respect to claims 9 & 11-14, the prior art of records fail to teach or suggest a method of minimizing detectability of a message transmitted by a frequency hopping algorithm, the method comprising: randomly ordering a sequence of the plurality of sub-dwell periods and the respective assigned nominal sub-frequencies during the dwell period; for each randomly ordered nominal sub-frequency, varying the nominal sub-frequency during the respective sub-dwell period by one of increasing and decreasing the nominal sub-frequency; and transmitting the message at frequencies by which each randomly ordered nominal sub-frequency has been increased or decreased; increasing a time that the transmitted frequency transitions from one randomly ordered nominal sub-frequency to a next randomly ordered nominal sub-frequency as recited in an independent claim 9 and in combination with other elements of the claim.

7. With respect to claims 15, 18 & 19, the prior art of records fail to teach or suggest a method of electronically transmitting a message, comprising: for each randomly ordered nominal sub-frequency, varying the nominal sub-frequency during the respective sub-dwell period by one of increasing or decreasing the nominal sub-frequency; and transmitting the message at frequencies by which each randomly ordered nominal sub-frequency has been increased or decreased; increasing a time that the transmitted frequency jumps from one randomly ordered nominal sub-frequency

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to a next randomly ordered nominal sub-frequency, wherein the increasing is accomplished by applying a band-limiting filter to the transmitted frequency as recited in an independent claim 15 and in combination with other elements of the claim.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Blahut (4,309,703) teaches segmented chirp waveform implemented radar system.
- Kwon et al. (2006/0239334) teach digital communication method and system.
- Emi (6,047,018) teaches multi-carrier communication method and device.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Contact Information***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naheed Ejaz whose telephone number is 571-272-5947. The examiner can normally be reached on Monday - Friday 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Naheed Ejaz  
Examiner  
Art Unit 2611

NE

10/6/2007

  
CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER